INFORMATION REPORT

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THIS IS UNEVALUATED INFORMATION

25X1 [redacted]

1. Within the past several years Dr. Leonhard Foitzik, a meteorologist attached to the Lindenberg Observatory of the Meteorological Service of the Russian Zone of Germany, has developed a new device for measuring visibility. From a scientific standpoint this instrument is considered to be very sound.

2. Two pilot models of the instrument have been constructed and are now being tested at the Lindenberg Observatory in the Russian Zone. In the January 195[illegible] issue of "Zeitschrift für Meteorologie" is a report on Dr. Foitzik's earlier work in this field. "Technische Mitteilungen der Instrumentenabteilung des MANWD, Nr. 20", published by the German Weather Service of the British Zone, also contain information on recent work in visibility measurement.

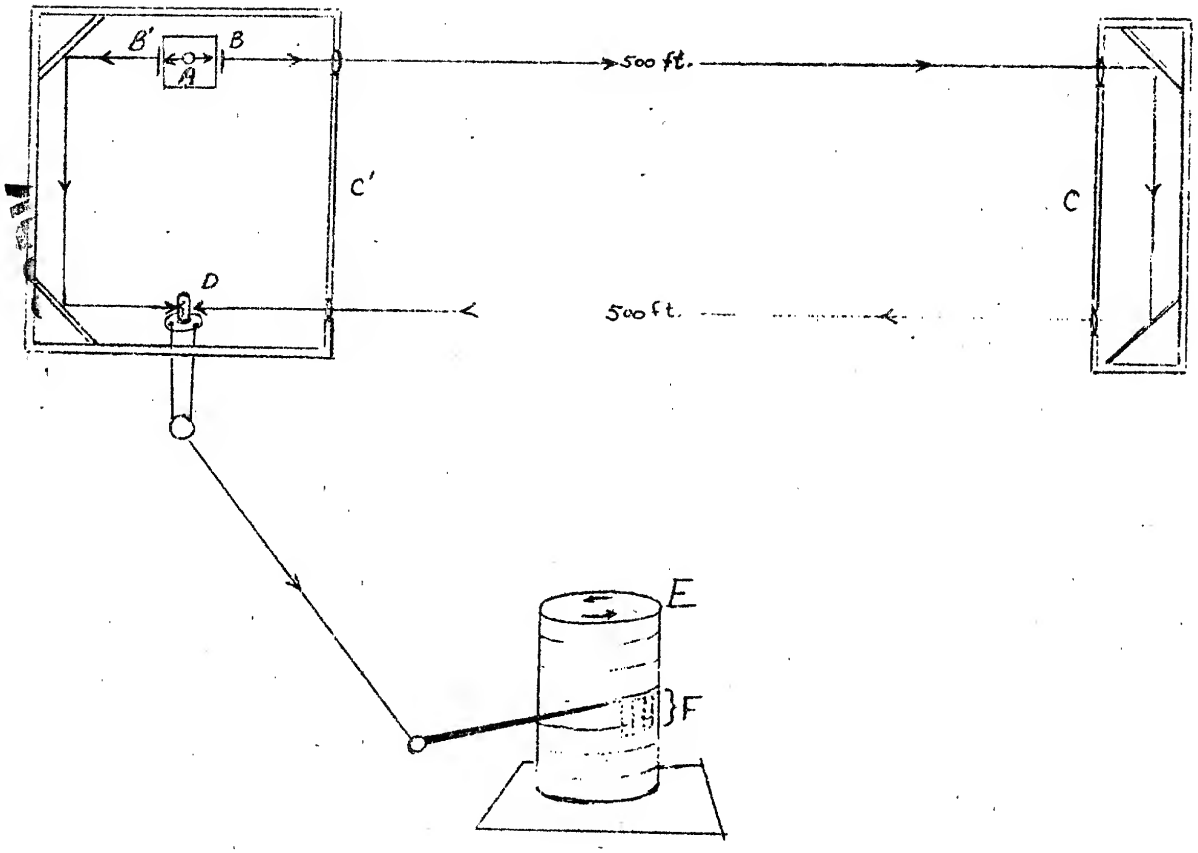
3. This new instrument is an optical-electrical device consisting of a projector which directs a beam of light alternately (a) outward through the atmosphere and (b) into the instrument itself by means of mechanical shutters. (See attached diagram and explanation of operation.) The light beam projected through the atmosphere is returned to the instrument by a reflecting station. This returned beam actuates a photo-electric cell within the instrument. The alternate beam of light directed within the instrument is reflected through a confined volume of air to the same photo-electric cell. The magnitudes of the currents developed in the photo-electric cell by the alternating light beams are recorded on a rotating drum. The magnitude of the current developed in the photo-electric cell by the light beam passing through the confined atmosphere is constant. The magnitude of the current developed by the external beam is a function of the turbidity of the atmosphere. The instrument is constructed in such a manner that the confined atmosphere remains free of anything tending to reduce visibility. Therefore, in the calibration of the graph, the current level registered by the beam passing through the confined atmosphere is considered to be the level of unrestricted visibility. The visibility corresponding to the other values on the graph must be determined locally for each installation. If the visibility being measured is actually unrestricted, the trace on the chart will be a straight line. In the event that the visibility is to any extent restricted, the trace produced by the external beam actuating the photo-electric cell drops quickly to a level corresponding to the degree of atmospheric turbidity.

4. A plan sketch of the instrument with explanation is attached.

Enclosure 1

Koschmieder - Foitzik - Askania

Visibility Recorder
(in principle)



Light is transmitted from Source A and passes alternately through electrically controlled shutters B and B' (when shutter B is open shutter B' is closed and vice versa). The light from shutter B is transmitted as a pencil of light to the reflecting station C and back to the originating station C'. At the originating station C' the light strikes a photoelectric cell D generating a current which is recorded at E. When the light is transmitted through shutter B' it is contained within the closed box C' and is transmitted to the photo-electric cell D generating a current which is also recorded on recorder E. The amount of strength of current recorded at E is a function of the intensity of the light beam striking the photoelectric cell and the intensity of the light travelling from C' to C and return is a function of the visibility between the two stations. A measurement of the visibility is obtained by reading the difference in current strength on recorder E as shown at F.